

To: Way, Steven[way.steven@epa.gov]
Cc: Marilyn Smith[m.smith@erllc.com]
From: Matt Francis
Sent: Wed 9/9/2015 10:32:18 PM
Subject: Fwd: Gold King
[image001.png](#)
[flow calcs lower section.pdf](#)

This sufficiently answer your question about flow from GK to Gladstone? If so I will proceed.

Sent via the Samsung Galaxy Note® 3, an AT&T 4G LTE smartphone

----- Original message -----

From: Eric Anderson <Eric@APTecUSA.com>
Date: 09/09/2015 3:56 PM (GMT-07:00)
To: Matt Francis <m.francis@erllc.com>, Ben Kneller <Ben@APTecUSA.com>
Cc: "Petri, Elliott" <Elliott.Petri@WestonSolutions.com>, Dale Kneller <Dale@APTecUSA.com>
Subject: RE: Gold King

Matt,

There is sufficient head in the system for the line to carry 1000GPM to Gladstone.

- From the laydown area to Gladstone there is approximately 280ft of drop (= 120psi of Head)
- Length from Laydown to Gladstone is approx. 2100ft

the first 2 attached sheets show the flow and line loss from the laydown to Gladstone.

- Considering a flat (no elevation loss/ gain) pipeline (6in DR11) at 1000 GPM there would be 90psi of pressure loss.
- Considering a flat (no elevation loss/ gain) pipeline (6in DR11) at 600 GPM there would be 35psi of pressure loss.

In the 3rd sheet we can see the potential of the gravity flow in that area considering

- A 5% slope the 6in DR11 pipe is capable of 600 GPM(Gravity flow 0 psi)
 - However the average grade from Laydown to Gladstone is >13%
- Additionally there is the potential of over 250 psi of head from the upper sections to maintain the flow.

Regards,
Eric Anderson
General Manager

[aptec logo sm bip]

From: Eric Anderson
Sent: Wednesday, September 9, 2015 1:49 PM
To: 'Matt Francis' <m.francis@erllc.com>; Ben Kneller <Ben@APTecUSA.com>
Cc: Petri, Elliott <Elliott.Petri@WestonSolutions.com>
Subject: RE: Gold King

Matt
We do have the flow calculations and will get them to you today as soon as Ben returns to the office.

Eric

From: Matt Francis [mailto:m.francis@erllc.com]
Sent: Wednesday, September 9, 2015 1:21 PM
To: Ben Kneller <Ben@APTecUSA.com<mailto:Ben@APTecUSA.com>>; Eric Anderson <Eric@APTecUSA.com<mailto:Eric@APTecUSA.com>>
Cc: Petri, Elliott <Elliott.Petri@WestonSolutions.com<mailto:Elliott.Petri@WestonSolutions.com>>
Subject: Gold King

We're getting closer to having everything resolved to move forward with the Gold King pipe project. One thing that has come up is the need for a calculation showing that the 6" line from the laydown area to Gladstone is capable of handling required flow rates.

With the elevation and routing information you have, can you provide a maximum flow rate for that section of the system? If you need additional information, please let me know and I'll try to assist.
Thanks

Matt Francis
Environmental Restoration, LLC
303.994.6611

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